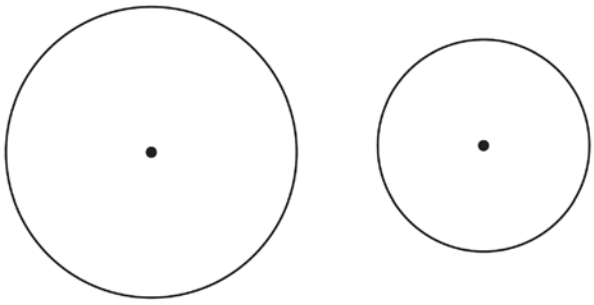
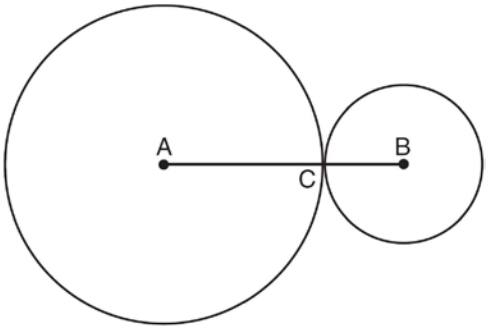
G.C.A.2: Chords, Secants and Tangents 6

1 How many common tangent lines can be drawn to the circles shown below?

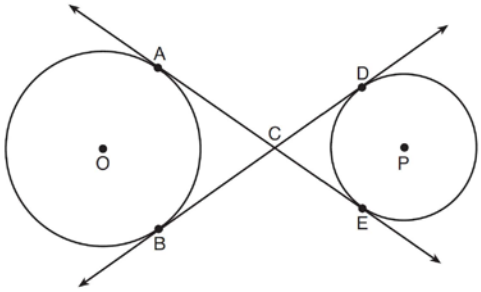


1) 1 2) 2 3) 3 4) 4

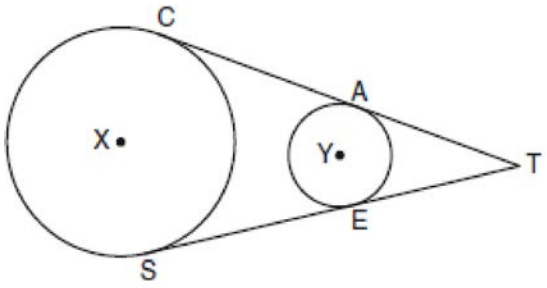
2 In the diagram below, circles A and B are tangent at point C and $\overline{AB}$ is drawn. Sketch all common tangent lines.



3 Lines AE and BD are tangent to circles O and P at A, E, B, and D, as shown in the diagram below. If $AC:CE = 5:3$, and $BD = 56$, determine and state the length of $\overline{CD}$.

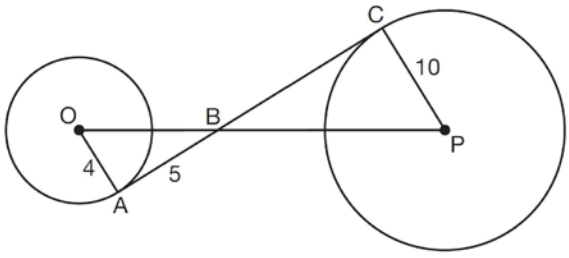


4 In the diagram below, circles X and Y have two tangents drawn to them from external point T. The points of tangency are C, A, S, and E. The ratio of TA to AC is $1:3$. If $TS = 24$, find the length of $\overline{SE}$.



(Not drawn to scale)

5 In the diagram shown below, $\overline{AC}$ is tangent to circle O at A and to circle P at C, $\overline{OP}$ intersects $\overline{AC}$ at B, $OA = 4$, $AB = 5$, and $PC = 10$.



What is the length of $\overline{BC}$?

1) 6.4 2) 8 3) 12.5 4) 16

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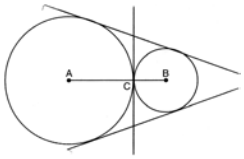
Answer Section

1 ANS: 4 REF: 011428ge

2 ANS:



REF: 011330ge

3 ANS:

$$\frac{3}{8} \cdot 56 = 21$$

REF: 081625geo

4 ANS:

18. If the ratio of *TA* to *AC* is 1:3, the ratio of *TE* to *ES* is also 1:3. $x + 3x = 24$. $3(6) = 18$.

$$x = 6$$

REF: 060935ge

5 ANS: 3

$$5 \cdot \frac{10}{4} = \frac{50}{4} = 12.5$$

REF: 081512geo